

DSP Flight 16 being launched from the Space Shuttle Atlantis, STS-44 on 24 November 1991.

consolidated into the Defense Support Program, and the first operational DSP satellite was launched on 6 November 1970. Since then, the program has undergone several upgrades and a total of 18 successful launches.

The original DSP satellite configuration, Phase I, was used on flights one through four and were launched into geostationary orbit on a Titan IIIC between 1970-1973. These satellites weighed approximately 2000 pounds and used Short Wavelength Infrared (SWIR), Lead Sulfide detectors to provide below the horizon (BTH) missile warning coverage. The design life of Phase I satellites was 1.25 years.

After the fourth satellite, the system was upgraded to allow for longer lifetimes and increased capability. This configuration, known as Phase II, weighed approximately

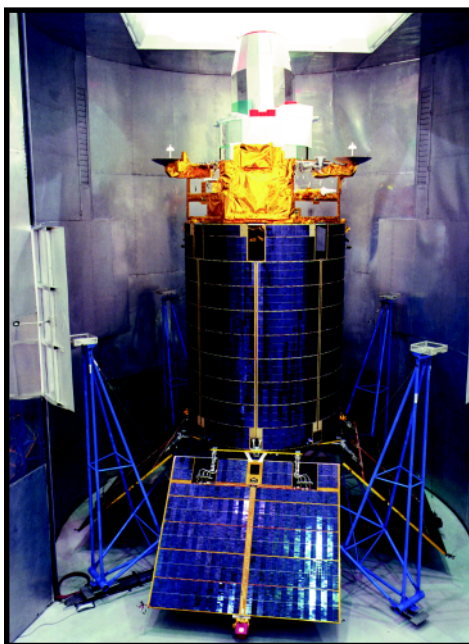
2300 pounds and had a two year design life. Phase II satellites were used for flights five through seven and launched between 1975-1977 on a Titan IIIC.

Flights eight through 11 were launched between 1979-1984 and contained further performance improvements to the Phase II configuration. Responding to additional Soviet threats, these satellites were capable of operating in geostationary or highly elliptical orbits and contained additional electronics packages. Designated as the Multi-Orbit Satellite/Performance Improvement (MOS/PIM) configuration, these satellites weighed approximately 2600 pounds, had a design life of three years and were launched on Titan IIIC and 34D boosters.

During the original Phase II production, two satellites were put into storage because the on-orbit spacecrafts were operating longer than expected and the MOS/PIM satellites were already being developed. These two satellites were brought out of storage in the early 1980s and retrofitted with a new primary sensor that allowed for above the horizon (ATH) SWIR coverage and increased polar resolution. This configuration, used on Flights 12 and 13 and known as the Phase II Upgrade, also contained a Medium Wavelength Infrared detector

for added capability against shorter range missiles. These satellites weighed 3700 pounds, had a design life of three years and were launched on the Titan 34D.

In 1989, the system was improved again. Flights 14 through 18 were modified to provide higher resolution and greater sensitivity in both short and medium wavebands. These satellites weighed approximately 5300 pounds, measured more than 28 feet in height and 13 feet in diameter and were launched on the Titan IV booster, with the exception of DSP Satellite 16 which was launched on the Space Shuttle Atlantis. This satellite configuration was designated DSP-1 and has a design life of five



Standing nearly 30 feet tall and 13 feet in diameter, a DSP-1 satellite is seen here inside a test chamber.